

Programme : M.Com.
 Course Code : COO338
 Course Title : **Basic Financial Econometrics**
 Number of Credits : 4
 Effective from AY : 2020-21

Need of the Course	: Estimation of fairly accurate models is crucial to decision making process in finance. The course in financial econometrics is needed to get required training in developing such models for informed decision making, management of financial risk and developing indicative but reliable forecasts.
Description of the Course	: Basic financial econometrics is an introductory course in financial econometrics covering topics in regression with special emphasis on assumptions, specification and estimation of bivariate and multiple regression models. It further includes study of violation of regression assumptions and measures for correcting models under such circumstances. The course introduces time series modelling with special focus forecasting techniques, analysis of time series using event study methodology. A component on volatility and factor models is introduced to enable learners acquire skills in modelling financial market volatility and make predictions.
Objectives of the Course	: (i) To provide foundational knowledge of regression analysis and develop skills in applying regression models to data. (ii) To provide knowledge and skills of diagnostic testing with respect to regression models. (iii) To enable learners master basic time series econometric techniques (iv) To enable learners acquire skills in developing volatility models and applying factor popular factor models to financial data.

Course Content

Unit 1	:Introduction to Financial Econometrics and Regression Analysis	12 Hours
Econometrics – meaning, and significance of econometrics in business decisions - Methodology of econometric analysis – Financial econometrics: Meaning, nature, process and applications of financial econometrics -Introduction to classical linear regression model - Assumptions of CLRM – Specification and estimation of bivariate and multiple regression models – Hypothesis testing and statistical inference – Properties of least square estimators (BLUE) – Basic model diagnostics using goodness of fit statistics– Regression terminology – Regression vs causation – Regression vs correlation – Reporting the results of regression analysis.		
Unit 2	: Econometric Modeling and Diagnostic Testing	14 Hours
Selection of model variables – Selection of functional form of regression – Model selection criteria – Issues in regression modelling - Autocorrelation, Heteroscedasticity, Multicollinearity – Consequences, tests for detection and remedial measures – Model misspecification errors – Types, consequences and tests of misspecification errors – Errors of measurement and relevant consequences.		
Unit 3	: Econometric modelling using Financial Time Series	12 Hours

Time series concepts – Sources of time series data - Components of time series – Measurement of seasonality, trend and cycles in time series, Stationarity in time series: Concept, Significance, Tests of stationarity in time series, ACF and PACF functions, Unit root tests, Transforming non-stationary time series – Econometric modelling and forecasting using time series data – AR, MA, ARMA and ARIMA modelling – Diagnostics and forecasting using ARIMA – Evaluating forecast accuracy - Event study methodology.

Unit 4	: Volatility and Factor Models	10 Hours
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Volatility models: ARCH process – GARCH process – Estimation of GARCH models – Variants of GARCH model – Forecasting with GARCH models - Factor models: Applications of Fama-French model, Fama-MacBeth model, Morgan Stanley's Macro Proxy model.

Pedagogy	: lectures/ case analysis/assignments/class room interaction/lab
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Reference/Readings	Fabozzi, F., Focardi, S., Rachev, S. and Arshanapalli, B. (2014) The Basics of Financial Econometrics: Tools, Concepts and Asset Management, Wiley. Asteriou Dimitrious,(2006), Applied Econometrics, Palgrave Macmillan, New York Cameroon Samuel (2005), Econometrics, McGraw Hill, New York. Davidson, J. (2000) Econometric Theory, Blackwell, USA Goldberger, A.S. (2000) Introductory Econometrics, Harvard University Press, Cambridge. Greene, W. (2004) Econometric Analysis, Prentice Hall, New York. Gujarati, D. (2004) Basic Econometrics, McGraw Hill, New Delhi. Hayashi, F (2000), Econometrics, Princeton University Press, Princeton. Pattreson, Kerry (2000) An Introduction to Applied Econometric: Time Series Approach, Palgrave Macmillan, New York Ramanathan Ramu (2002), Introductory Econometrics with applications, Thomson South Western, Singapore Wooldridge (2006), Introductory Econometrics, Thomson-South Western, Singapore.
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Course Outcome	: Upon completion of the course learners will be able to: CO1. Apply methodology of regression analysis in developing models for data in social sciences. CO2. Perform diagnostic tests on regression models and improvise their models. CO3. Develop basic time series models for forecasting using ARIMA structure. CO4. Apply event study methodology on time series data for research and analytical purposes. CO5. Develop models with time series data for volatility forecasting. CO6. Demonstrate ability to apply factor models for estimation of expected returns.
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Online Resources	https://www.youtube.com/user/econometricsacademy https://www.youtube.com/user/patobi1 https://sites.google.com/site/econometricsacademy/home https://www.economicsnetwork.ac.uk/teaching/Online%20Text%20and%20Notes/Econometrics https://www.ssc.wisc.edu/~bhansen/econometrics/Econometrics.pdf
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